REMARKS

Entry of the foregoing and further and favorable consideration of the subject application in view of the following comments is respectfully requested.

By the present amendment, a substitute paper copy and computer form of the Sequence Listing is submitted in accordance with 37 C.F.R. § 1.825. The Sequence Listing is corrected to now include sequences that were disclosed in the specification as originally filed but were inadvertently omitted from the Sequence Listing as previously filed.

In addition, the specification is amended at pages 30-31, 36, 41, 42 and 45 to refer to the Sequence Listing and to correct minor grammatical errors. The table at page 36 is also amended to replace the French word "et" with its English equivalent "and." It is believed that the application, as amended, is in full compliance with the requirements of 37 C.F.R. §§ 1.821-825. No new matter is believed to have been added by the foregoing amendments.

Respectfully submitted,

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Attachment to Amendment dated August 2, 2002

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Canceled text denoted by ~~srikeout~~ and added text denoted by underline.

Please replace the paragraph bridging pages 30-31, as follows:

Figure 11 shows that MUC1 derived HLA-A*0201 binding peptides induce peptide specific cytotoxic CTL responses. $A2K^b$ mice were immunised twice with 100μg of MUC1 peptide in IFA and 140μg of Th peptide on day -28 and -14. On day 0 single cell splenocyte suspensions were restimulated *in vitro* for one week with peptide loaded syngeneic LPS-elicited lymphoblasts and tested for cytotoxicity of peptide loaded Jurkat-$A*0201K^b$. Groups of $A2K^b$ mice were immunised with MUC1 peptides $MUC1^{264-272}$ (FLSFHISNL; SEQ ID NO:4), $MUC1^{460-468}$ (SLSYTNPAV; SEQ ID NO:6), $MUC1^{13-21}$ (LLLTVLTVV; SEQ ID NO:65), $MUC1^{167-175}$ (ALGSTAPPV; SEQ ID NO:3) or $MUC1^{79-87}$ (TLAPATEPA; SEQ ID NO:5). CTL bulk cultures were tested against Jurkat-$A*0201K^b$ cells loaded with the cognate peptide (filled triangles) or irrelevant influenza matrix control peptide (open circles). Three representative graphs for each peptide are shown. The vertical axis shows % specific lysis.

Please replace Table 2 at page 36 as follows:

Allele tested	elution pH	Reference Polypeptide			Positive Control Polypeptide (SEQ ID NO:)	B-EBV Line	HLA Type
		sequence (SEQ ID NO:) *(origin)*	Conc. pmol/μl	Final Conc. nM			
A1	pH 3.1	YLEPAC*AKY (68)	183	150	CTELKLSDY (74) *(Influenza NP 44-52)*	**MAR**	**A01**, A02, B08, B27, C01, C07
A2	pH 3.1	FLPSDC*FPSV (69) *(HBV core 18-27)*	250	150	GILGFVFTL (75) *(Influenza matrix 58-66)*	**JY**	**A02**, B07, C07
A3	pH 3	KVFPC*ALINK (70)	28 et and 20	150	QVPLRPMTYK (76) *(HIV nef 73-82)*	**FRE**	**A03**, A24, B35, B08, C04, C07
A11	pH 3	KVFPC*ALINK (70)	28 et and 20	150		**BVR**	**A11**, B35, C04
A24	pH 3.1	RYLKC*QQLL (71) *(HIV gp41 583-591)*	66 et and 20	150	AYGLDFYIL (77) *(melanoma p15 10-18)*	**YT2**	**A24**, B54, C01
B7	pH 3.1	APAPAPC*WPL (72) *(human p53 84-93)*	29 et and 20	150	RPPIFIRRL (78) *(EBNA-3A 379-387)*	**JY**	A02, **B07**, C07
B8	pH 3.1	FLRGRAC*GI (73) *(EBNA-3 339-347)*	20	150	YLKDQQLL (79) *(HIV gp41 591-598)*	**MAR**	A01, A02, **B08**, B27, C01, C07

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Please replace the first paragraph at page 41 as follows:

Peptide binding to HLA-A*0201 was analysed using HLA-A*0201$^+$ B lymphoblastoid JY cells in a semi-quantitative competition assay (van der Burg et al. (J. Immunol. 156 (1996), 3308-3314)). The assay is based on competitive binding of two peptides to acid stripped MHC class I molecules on a B cell line (JY). A test peptide competes with a fluorescently ~~labelled~~ labeled reference peptide for the empty class I molecules on the cell surface. Mild-acid-treated JY cells were incubated with 150nM fluorescein (FL)-~~labelled~~ labeled reference peptide FLPSDC(-FL)FPSV (SEQ ID NO: 69) and with several concentrations of competitor peptide for 24 hours at 37°C in the presence of 1.0μg/ml β2-microglobulin. Subsequently, the cells were washed, fixed with paraformaldehyde and analysed by flow cytometry. The mean fluorescence (MF) obtained in the absence of competitor peptide was regarded as maximal binding and equated to 0%; the MF obtained without reference peptide was equated to 100% inhibition. The percentage inhibition was calculated using the formula:

Please replace the table at page 42 as follows:

Peptide Position	Amino Acid Sequence	Motif Score *	IC_{50} mM/ml
Flu Matrix$^{58-66}$	GILGVVFTL (SEQ ID NO: 75)	54	<5
MUC1$^{264-272}$	FLSFHISNL (SEQ ID NO: 4)	59	3-5
MUC1$^{460-468}$	SLSYTNPAV (SEQ ID NO: 6)	62	5-10
MUC1$^{13-21}$	LLLTVLTVV (SEQ ID NO: 65)	63	6-10
MUC1$^{167-175}$	ALGSTAPPV (SEQ ID NO: 3)	64	10
MUC1$^{79-87}$	TLAPATEPA (SEQ ID NO: 5)	58	10-15
MUC1$^{107-115}$	ALGSTTPPA (SEQ ID NO: 66)	56	25

Please replace the last full paragraph at page 42 as follows:

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Transgenic mice expressing the chimeric protein A*0201K^b (Vitiello et al., loc. cit.) were immunised subcutaneously in the base of the tail with 100µg of MUC1-derived peptide and 140µg of H-2 I-A^b-restricted HBV core antigen-derived T helper epitope (amino acid sequence; TPPAYRPPNAPIL; SEQ ID NO:80) (Milich et al., Proc. Natl. Acad. Sci. USA 85 (1988), 1610-1614) emulsified in a 1:1 ratio with Incomplete Freund's Adjuvant (IFA) in a total volume of 200 µl. After a minimum of two weeks, the mice were boosted using the same protocol.

Please replace the first two full paragraphs at page 45 as follows:

To test whether the HLA-A*0201 binding peptides that were previously identified could protect A2K^b transgenic mice (Vitiello et al., loc. cit.) against subsequent tumour challenge with B16-MUC1-A2K^b, groups of 6-8 animals were immunised with 100µg of peptide in IFA in the presence of 140µg of the H-2 I-A^b-restricted HBV core antigen-derived T helper epitope (128-140; sequence TPPAYRPPNAPIL; SEQ ID NO:80)(Milich et al., loc. cit.), on day -28, boosted on day -14 and challenged with 5x10^5 B16-MUC1-A2K^b cells on day 0. Control mice were given IFA or PBS. A measurable tumour was defined as having a volume greater than 36 mm^3.

Results from these experiments are shown in the tables below in the form of the percentage of mice surviving at a given day. For experiments 2 and 3, results of using a vaccinia construct that expresses MUC1 (VV-MUC1) are also shown. In other experiments, immunising with MUC1$^{167-175}$ and boosting with MUC1$^{79-87}$, or immunising with MUC1$^{79-87}$ and boosting with MUC1$^{167-175}$, gave a percentage survival of between 60 and 70% at day 30. Experiment 3 shows results from an experiment in which the mice were inoculated with 8x10^5 A2K^b dendritic cells (DC) which had been pulsed with the peptides.